

GP-303464

ENGINE AND METHOD OF OPERATION
WITH CYLINDER DEACTIVATION

ABSTRACT OF THE DISCLOSURE

An engine with cylinder deactivation (Displacement on Demand or DOD™) includes standard (STD) cylinders which are not deactivated and DOD cylinders which can be deactivated by closing their intake and exhaust
5 valves and shutting off their fuel supply. To provide smooth transitions, the STD and DOD cylinders form separate groups each supplied with charge air through one or more separate throttles. When switching to DOD operation, the throttles are oppositely actuated to cut out the DOD cylinders and
maintain torque in the active cylinders prior to deactivation of the cylinder
10 valves. When returning to STD operation, the valves are reactivated before oppositely actuating the throttles to enable full cylinder operation. In DOD operation, a small supercharger may be operated to boost torque of the operating STD cylinders and thus increase the DOD operating range.